CLAIM AMENDMENTS

Claims 1-20 (canceled).

Claim 21 (previously presented): A hardness tester for measuring a hardness of a tested object having a testing surface, comprising:

a supporting frame comprising a hand-held casing having a receiving chamber, a driving wheel rotatably mounted to said hand-held casing, and a tubular guiding cylinder having an elongated guiding channel extended from said hand-held casing at a position that said guiding channel is coaxially extended to communicate with said receiving chamber;

a driving axle slidably disposed in said receiving chamber of said supporting frame;

a gear unit supported in said hand-held casing to operatively couple said driving wheel with said driving axle in such a manner that when said driving wheel is rotated, said driving wheel is adapted for applying a penetrating force on said driving axle through said gear unit;

a penetrating pin, having a pin head, coaxially disposed in said guiding channel in a slidably movable manner to coaxially align with said driving axle for said pin head to penetrate on said testing surface of said tested object; and

a linear displacement device, comprising a transmission shaft slidably disposed in said receiving chamber to end-to-end contact between said driving axle and said penetrating pin, and a displacement sensor supported in said receiving chamber for detecting a linear displacement of said transmission shaft, wherein when said transmission shaft transmits said penetrating force from said driving axle to said penetrating pin, said linear sensor detects said linear displacement of said transmission shaft in response to said penetrating pin for measuring said hardness of said tested object.

Claim 22 (previously presented): The hardness tester, as recited in claim 21, wherein an opening edge of said guiding cylinder has a flat surface for substantially biasing against said testing surface of said tested object in such a manner that said

opening edge of said guiding cylinder functions as a guiding surface to guide said pin head of said penetrating pin for perpendicularly penetrating on said testing surface of said tested object.

Claim 23 (currently amended): The hardness tester, as recited in claim 21, wherein said displacement sensor~~, which is a capacitive sensor,~~ comprises a linear sensor circuit supported within said receiving chamber and first and second linear sensor terminals electrically coupling with said sensor circuit and said transmission shaft respectively in such a manner that when said transmission shaft is driven to move within said receiving chamber, said linear sensor circuit detects said linear displacement of said transmission shaft with respect to a positioning differentiation between said linear first and second terminals.

Claim 24 (currently amended): The hardness tester, as recited in claim 22, wherein said displacement sensor~~, which is a capacitive sensor,~~ comprises a linear sensor circuit supported within said receiving chamber and first and second linear sensor terminals electrically coupling with said sensor circuit and said transmission shaft respectively in such a manner that when said transmission shaft is driven to move within said receiving chamber, said linear sensor circuit detects said linear displacement of said transmission shaft with respect to a positioning differentiation between said linear first and second terminals.

Claim 25 (currently amended): The hardness tester, as recited in claim 21, wherein said transmission shaft has a driven end ~~point-to-point~~ contacting with said driving axle and a driving end ~~point-to-point~~ contacting with said penetrating pin, wherein the transmission shaft is adapted for transmitting said penetrating force from said driving shaft as a pushing force to slidably push said penetrating pin to coaxially slide along said guiding channel for said pin head of said penetrating pin penetrating on said testing surface of said tested object.

Claim 26 (currently amended): The hardness tester, as recited in claim 22, wherein said transmission shaft has a driven end ~~point-to-point~~ contacting with said driving axle and a driving end ~~point-to-point~~ contacting with said penetrating pin, wherein the transmission shaft is adapted for transmitting said penetrating force from said driving shaft as a pushing force to slidably push said penetrating pin to coaxially slide along

said guiding channel for said pin head of said penetrating pin penetrating on said testing surface of said tested object.

Claim 27 (currently amended): The hardness tester, as recited in claim 24, wherein said transmission shaft has a driven end ~~point-to-point~~ contacting with said driving axle and a driving end ~~point-to-point~~ contacting with said penetrating pin, wherein the transmission shaft is adapted for transmitting said penetrating force from said driving shaft as a pushing force to slidably push said penetrating pin to coaxially slide along said guiding channel for said pin head of said penetrating pin penetrating on said testing surface of said tested object.

Claim 28 (currently amended): The hardness tester, as recited in claim 21, further comprising a force sensor~~, which is a resistance strain gage,~~ supported within said receiving chamber to couple with said driving axle for detecting said penetrating force thereon, wherein said force sensor comprises a force sensor circuit supported at said receiving chamber and first and second force sensor terminals electrically coupling with said force sensor circuit and said driving axle respectively, in such a manner that said force sensor circuit is adapted for detecting said penetrating force on said driving axle with respect to a positioning differentiation between said first and second force sensor terminals.

Claim 29 (currently amended): The hardness tester, as recited in claim 24, further comprising a force sensor~~, which is a resistance strain gage,~~ supported within said receiving chamber to couple with said driving axle for detecting said penetrating force thereon, wherein said force sensor comprises a force sensor circuit supported at said receiving chamber and first and second force sensor terminals electrically coupling with said force sensor circuit and said driving axle respectively, in such a manner that said force sensor circuit is adapted for detecting said penetrating force on said driving axle with respect to a positioning differentiation between said first and second force sensor terminals.

Claim 30 (currently amended): The hardness tester, as recited in claim 27, further comprising a force sensor~~, which is a resistance strain gage,~~ supported within said receiving chamber to couple with said driving axle for detecting said penetrating force thereon, wherein said force sensor comprises a force sensor circuit supported at

said receiving chamber and first and second force sensor terminals electrically coupling with said force sensor circuit and said driving axle respectively, in such a manner that said force sensor circuit is adapted for detecting said penetrating force on said driving axle with respect to a positioning differentiation between said first and second force sensor terminals.

Claim 31 (previously presented): The hardness tester, as recited in claim 22, further comprising a retaining frame extended from said supporting frame, wherein said retaining frame has a supporting platform adjustably aligned with said pin head of said penetrating pin for substantially retaining said opening edge of said guiding channel at said testing surface of said tested object.

Claim 32 (previously presented): The hardness tester, as recited in claim 27, further comprising a retaining frame extended from said supporting frame, wherein said retaining frame has a supporting platform adjustably aligned with said pin head of said penetrating pin for substantially retaining said opening edge of said guiding channel at said testing surface of said tested object.

Claim 33 (previously presented): The hardness tester, as recited in claim 30, further comprising a retaining frame extended from said supporting frame, wherein said retaining frame has a supporting platform adjustably aligned with said pin head of said penetrating pin for substantially retaining said opening edge of said guiding channel at said testing surface of said tested object.

Claim 34 (previously presented): The hardness tester, as recited in claim 31, wherein said retaining frame comprises a retaining arm having a L-shape extended from said supporting frame and a supporting member which defines said supporting platform thereon and has a spherical bottom portion mounted at a free end of said retaining arm in a rotatably movable manner such that said opening edge of said guiding channel and said supporting platform are adapted for substantially biasing against said tested object to align said pin head of said penetrating pin with said testing surface of said tested object.

Claim 35 (previously presented): The hardness tester, as recited in claim 32, wherein said retaining frame comprises a retaining arm having a L-shape extended from said supporting frame and a supporting member which defines said supporting platform

thereon and has a spherical bottom portion mounted at a free end of said retaining arm in a rotatably movable manner such that said opening edge of said guiding channel and said supporting platform are adapted for substantially biasing against said tested object to align said pin head of said penetrating pin with said testing surface of said tested object.

Claim 36 (previously presented): The hardness tester, as recited in claim 33, wherein said retaining frame comprises a retaining arm having a L-shape extended from said supporting frame and a supporting member which defines said supporting platform thereon and has a spherical bottom portion mounted at a free end of said retaining arm in a rotatably movable manner such that said opening edge of said guiding channel and said supporting platform are adapted for substantially biasing against said tested object to align said pin head of said penetrating pin with said testing surface of said tested object.